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5756680.pn.	1

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<u>L3</u>	5756680.pn.	1	<u>L3</u>
<u>L2</u>	alpha lactalbumin	326591	<u>L2</u>
<u>L1</u>	5986063.pn.	1	<u>L1</u>

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NEWS 31 Apr 14 MEDLINE Reload  
NEWS 32 Apr 17 Polymer searching in REGISTRY enhanced  
NEWS 33 Apr 21 Indexing from 1947 to 1956 being added to records in CA/CAPLUS  
NEWS 34 Apr 21 New current-awareness alert (SDI) frequency in  
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=> s casein  
L1 116300 CASEIN

=> s alpha lactalbumin  
L2 10593 ALPHA LACTALBUMIN

=> s l1 and l2  
L3 2549 L1 AND L2

=> s l3 and low pH  
L4 84 L3 AND LOW PH

=> s ion exchange chromatography  
L5 53889 ION EXCHANGE CHROMATOGRAPHY

```
=> s MAL
L6      31759 MAL

=> s l6 and l2
L7      56 L6 AND L2

=> s l2 and molten globule-like state
L8      44 L2 AND MOLTEN GLOBULE-LIKE STATE

=> s l2 and A state
      2 FILES SEARCHED...
      5 FILES SEARCHED...
L9      172 L2 AND A STATE

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(FILE 'HOME' ENTERED AT 11:38:57 ON 19 MAY 2003)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, SCISEARCH, WPIDS, BIOSIS, FSTA, JICST-EPLUS' ENTERED AT 11:39:29 ON 19 MAY 2003

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L1      116300 S CASEIN
L2      10593 S ALPHA LACTALBUMIN
L3      2549 S L1 AND L2
L4      84 S L3 AND LOW PH
L5      53889 S ION EXCHANGE CHROMATOGRAPHY
L6      31759 S MAL
L7      56 S L6 AND L2
L8      44 S L2 AND MOLTEN GLOBULE-LIKE STATE
L9      172 S L2 AND A STATE
```

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=> s l4 and l5
L10     6 L4 AND L5
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=> d l10 ti abs ibib tot
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L10 ANSWER 1 OF 6 USPATFULL
TI   Milk and cheese modification process, including methods of extracting
      beta-lactoglobulin and caseins from milk and milk products, and novel
      products thereby produced
AB   A method for diagggregating and reforming the casein micelles
      of milk to produce a product with physical properties differing
      significantly from that of the original milk. There is also provided a
      milk fraction highly enriched in beta-lactoglobulin (BLG) and a soluble
      whey fraction correspondingly depleted.
```

```
ACCESSION NUMBER: 2003:113651 USPATFULL
TITLE:            Milk and cheese modification process, including methods
                  of extracting beta-lactoglobulin and caseins from milk
                  and milk products, and novel products thereby produced
INVENTOR(S):      Leaver, Jeff, Ayr, UNITED KINGDOM
                  Law, Andrew, Ayr, UNITED KINGDOM
```

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003078392	A1	20030424
APPLICATION INFO.:	US 2002-181725	A1	20021015 (10)
	WO 2001-GB208		20010122

	NUMBER	DATE
PRIORITY INFORMATION:	GB 2000-1433	20000122
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	

LEGAL REPRESENTATIVE: Fleshner & Kim, PO Box 221200, Chantilly, VA,  
20153-1200  
NUMBER OF CLAIMS: 27  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 6 Drawing Page(s)  
LINE COUNT: 652

L10 ANSWER 2 OF 6 USPATFULL

TI Complementary DNA's encoding proteins with signal peptides  
AB The sequences of cDNAs encoding secreted proteins are disclosed. The cDNAs can be used to express secreted proteins or fragments thereof or to obtain antibodies capable of specifically binding to the secreted proteins. The cDNAs may also be used in diagnostic, forensic, gene therapy, and chromosome mapping procedures. The cDNAs may also be used to design expression vectors and secretion vectors.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:102443 USPATFULL  
TITLE: Complementary DNA's encoding proteins with signal peptides  
INVENTOR(S): Edwards, Jean-Baptiste Dumas Milne, Paris, FRANCE  
Bougueleret, Lydie, Vanves, FRANCE  
Jobert, Severin, Paris, FRANCE  
PATENT ASSIGNEE(S): Genset, S.A., FRANCE (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6548633	B1	20030415
APPLICATION INFO.:	US 2000-599360		20000621 (9)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1999-469099, filed on 21 Dec 1999, now abandoned		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-141032P	19990625 (60)
	US 1998-113686P	19981222 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Horlick, Kenneth R.	
ASSISTANT EXAMINER:	Kim, Young	
LEGAL REPRESENTATIVE:	Saliwanchik, Lloyd & Saliwanchik	
NUMBER OF CLAIMS:	8	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	9 Drawing Figure(s); 9 Drawing Page(s)	
LINE COUNT:	13743	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 3 OF 6 USPATFULL

TI Purification of biologically active peptides from milk  
AB A method of separating a soluble milk component from milk is disclosed. The method involves the use of tangential flow filtration across a membrane to form a retentate and a permeate, combining the permeate with the original milk sample, and repeating this procedure until the milk has been sufficiently purified. Preferably, the milk is combined with a chelating agent, such as EDTA, to improve the purification efficiency. This procedure is advantageously employed with milk from transgenic animals which have been genetically altered to express exogenous proteins, such as therapeutic proteins, in their milk.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2001:121594 USPATFULL  
TITLE: Purification of biologically active peptides from milk  
INVENTOR(S): Kutzko, Joseph P., Southboro, MA, United States  
Hayes, Michael L., Acton, MA, United States

PATENT ASSIGNEE(S): Sherman, Lee T., Northboro, MA, United States  
Genzyme Transgenics Corporation, Framingham, MA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6268487	B1	20010731
APPLICATION INFO.:	US 1996-648235		19960513 (8)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	GRANTED		
PRIMARY EXAMINER:	Celsa, Bennett		
LEGAL REPRESENTATIVE:	Fish & Richardson P.C.		
NUMBER OF CLAIMS:	16		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	5 Drawing Figure(s); 3 Drawing Page(s)		
LINE COUNT:	853		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 4 OF 6 USPATFULL

TI Membrane filtered milk proteins varying in composition and functional attributes

AB A process is described for treating an approximately neutral fluid milk composition, including milk protein concentrate and milk plus added whey, by selecting an alkali, adjusting the pH upward, heating, cooling, selecting an acid, and adjusting the pH down before ultrafiltering and, in a more preferred process, thereafter diafiltering the treated composition. Selection of the appropriate alkali, pH values, temperatures, acid, and membrane filter porosity results in improved yields of retentate proteins having selected compositions with improved utility, including a more palatable flavor, a broad range of solution viscosities, an increase in the solubility of the dried retentates in cold water to nearly 100%, and an increase in the calcium content of the membrane filtered retentate by about 50% compared to a similar retentate from standard milk. Appropriate selection of processing conditions can result in at least one filter permeate with a protein composition enriched in **alpha lactalbumin**, a protein that is highly beneficial for human nutrition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:145947 USPATFULL

TITLE: Membrane filtered milk proteins varying in composition and functional attributes

INVENTOR(S): Blazey, Neil D., Santa Rosa, CA, United States  
Knights, Ralph J., Santa Rosa, CA, United States  
Wu, Chao, Aimes, IA, United States

PATENT ASSIGNEE(S): New Zealand Milk Products (North Amerca) Inc., Santa Rosa, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6139901		20001031
APPLICATION INFO.:	US 1998-153619		19980915 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-59042P	19970916 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Weier, Anthony J.	
LEGAL REPRESENTATIVE:	Knobbe, Martens, Olson & Bear LLP	
NUMBER OF CLAIMS:	35	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	8 Drawing Figure(s); 8 Drawing Page(s)	
LINE COUNT:	1444	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 5 OF 6 USPATFULL

TI Suppression of electroosmosis with hydrolytically stable coatings  
AB Surfaces of silica-containing materials, such as the inner walls of silica capillaries, used in chromatographic, particularly electrophoretic, separations are coated with an organic polymer layer to reduce or eliminate surface charges. The layer is applied by first converting the silanol groups on the surface to silicon halide groups, then reacting these groups with an organometallic reagent having a terminal ethenyl moiety, preferably vinyl or allyl lithium or a vinyl or allyl magnesium halide, to convert the silicon halide groups to Si--R groups where the R retains the terminal ethenyl moiety, and finally reacting these ethenyl groups newly attached to the surface with a neutral organic monomer in an addition polymerization reaction to form a monomolecular noncrosslinked polymer layer over the surface. The resulting polymer layer is linked to the silica directly through a Si--C bond which is stable over a wide range of pH conditions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 92:72307 USPATFULL  
TITLE: Suppression of electroosmosis with hydrolytically stable coatings  
INVENTOR(S): Novotny, Milos V., Bloomington, IN, United States  
Cobb, Kelly A., Bloomington, IN, United States  
Dolnik, Vladislav, Brno, Czechoslovakia  
PATENT ASSIGNEE(S): Indiana University Foundation, Bloomington, IN, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5143753		19920901
APPLICATION INFO.:	US 1991-760677		19910916 (7)
RELATED APPLN. INFO.:	Division of Ser. No. US 1990-603589, filed on 26 Oct 1990		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Niebling, John		
ASSISTANT EXAMINER:	Koestner, Caroline		
LEGAL REPRESENTATIVE:	Townsend and Townsend		
NUMBER OF CLAIMS:	17		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	4 Drawing Figure(s); 2 Drawing Page(s)		
LINE COUNT:	667		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 6 OF 6 USPATFULL

TI Suppression of electroosmosis with hydrolytically stable coatings  
AB Surfaces of silica-containing materials, such as the inner walls of silica capillaries, used in chromatographic, particularly electrophoretic, separations are coated with an organic polymer layer to reduce or eliminate surface charges. The layer is applied by first converting the silanol groups on the surface to silicon halide groups, then reacting these groups with an organometallic reagent having a terminal ethenyl moiety, preferably vinyl or allyl lithium or a vinyl or allyl magnesium halide, to convert the silicon halide groups to Si--R groups where the R retains the terminal ethenyl moiety, and finally reacting these ethenyl groups newly attached to the surface with a neutral organic monomer in an addition polymerization reaction to form a monomolecular noncrosslinked polymer layer over the surface. The resulting polymer layer is linked to the silica directly through a Si--C bond which is stable over a wide range of pH conditions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 91:103861 USPATFULL  
 TITLE: Suppression of electroosmosis with hydrolytically stable coatings  
 INVENTOR(S): Novotny, Milos V., Bloomington, IN, United States  
 Cobb, Kelly A., Bloomington, IN, United States  
 Dolnik, Vladislav, Brno, Czechoslovakia  
 PATENT ASSIGNEE(S): Indiana University Foundation, Bloomington, IN, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5074982		19911224
APPLICATION INFO.:	US 1990-603589		19901026 (7)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Niebling, John		
ASSISTANT EXAMINER:	Koestner, Caroline		
LEGAL REPRESENTATIVE:	Townsend and Townsend		
NUMBER OF CLAIMS:	6		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	4 Drawing Figure(s); 2 Drawing Page(s)		
LINE COUNT:	649		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, SCISEARCH, WPIDS, BIOSIS, FSTA, JICST-EPLUS' ENTERED AT 11:39:29 ON 19 MAY 2003

L1 116300 S CASEIN  
 L2 10593 S ALPHA LACTALBUMIN  
 L3 2549 S L1 AND L2  
 L4 84 S L3 AND LOW PH  
 L5 53889 S ION EXCHANGE CHROMATOGRAPHY  
 L6 31759 S MAL  
 L7 56 S L6 AND L2  
 L8 44 S L2 AND MOLTEN GLOBULE-LIKE STATE  
 L9 172 S L2 AND A STATE  
 L10 6 S L4 AND L5

=> s l8 not l9

L11 37 L8 NOT L9

=> s l11 and l2

L12 37 L11 AND L2

=> s l12 and l1

L13 4 L12 AND L1

=> d l13 ti abs ibib tot

L13 ANSWER 1 OF 4 SCISEARCH COPYRIGHT 2003 THOMSON ISI

TI 'New views' on structure-function relationships in milk proteins

AB The molten globule state has been regarded as a major intermediate in protein folding. It is characterized by native-like secondary structure with a compact molecular size but little specific tertiary structure. **alpha-lactalbumin** under various denaturing conditions has been considered a paradigm of the classical molten globule state. It has been shown that caseins share many of the same properties and may therefore exist naturally in a **molten globule-like state** with defined secondary structure and limited fluctuating tertiary structure, which lead to their propensity for



polymerization. The architectural concepts of tensegrity may be used to describe, in part, the structure of **casein** polymers. (C) 2002 Elsevier Science Ltd. All rights reserved.

ACCESSION NUMBER: 2002:845550 SCISEARCH  
THE GENUINE ARTICLE: 601FX  
TITLE: 'New views' on structure-function relationships in milk proteins  
AUTHOR: Qi P X (Reprint); Brown E M; Farrell H M  
CORPORATE SOURCE: USDA, Agr Res Serv, Eastern Reg Res Ctr, 600 E Mermaid Lane, Wyndmoor, PA 19038 USA (Reprint); USDA, Agr Res Serv, Eastern Reg Res Ctr, Wyndmoor, PA 19038 USA  
COUNTRY OF AUTHOR: USA  
SOURCE: TRENDS IN FOOD SCIENCE & TECHNOLOGY, (SEP 2001) Vol. 12, No. 9, pp. 339-346.  
Publisher: ELSEVIER SCIENCE LONDON, 84 THEOBALDS RD, LONDON WC1X 8RR, ENGLAND.  
ISSN: 0924-2244.  
DOCUMENT TYPE: Article; Journal  
LANGUAGE: English  
REFERENCE COUNT: 47

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

L13 ANSWER 2 OF 4 SCISEARCH COPYRIGHT 2003 THOMSON ISI

TI Molten globule structures in milk proteins: Implications for potential new structure-function relationships

AB Recent advances in the field of protein chemistry have significantly enhanced our understanding of the possible intermediates that may occur during protein folding and unfolding. In particular, studies on **alpha-lactalbumin** have led to the theory that the molten globule state may be a possible intermediate in the folding of many proteins. The molten globule state is characterized by a somewhat compact structure, a higher degree of hydration and side chain flexibility, a significant amount of native secondary structure but little tertiary folds, and the ability to react with chaperones. Purified alpha(s1)-kappa-caseins share many of these same properties; these caseins may thus occur naturally in a **molten globule-like state** with defined, persistent structures. The caseins appear to have defined secondary structures and to proceed to quaternary structures without tertiary folds. This process may be explained, in part, by comparison with the architectural concepts of tensegrity. By taking advantage of this "new view" of protein folding, and applying these concepts to dairy proteins, it may be possible to generate new and useful forms of proteins for the food ingredient market.

ACCESSION NUMBER: 2002:295981 SCISEARCH  
THE GENUINE ARTICLE: 536UK  
TITLE: Molten globule structures in milk proteins: Implications for potential new structure-function relationships  
AUTHOR: Farrell H M (Reprint); Qi P X; Brown E M; Cooke P H; Tunick M H; Wickham E D; Unruh J J  
CORPORATE SOURCE: USDA ARS, Eastern Reg Res Ctr, 600 E Mermaid Lane, Wyndmoor, PA 19038 USA (Reprint); USDA ARS, Eastern Reg Res Ctr, Wyndmoor, PA 19038 USA  
COUNTRY OF AUTHOR: USA  
SOURCE: JOURNAL OF DAIRY SCIENCE, (MAR 2002) Vol. 85, No. 3, pp. 459-471.  
Publisher: AMER DAIRY SCIENCE ASSOC, 1111 N DUNLAP AVE, SAVOY, IL 61874 USA.  
ISSN: 0022-0302.  
DOCUMENT TYPE: Article; Journal  
LANGUAGE: English  
REFERENCE COUNT: 31

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

L13 ANSWER 3 OF 4 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

TI Molten globule structures in milk proteins: Implications for potential new structure-function relationships.

AB Recent advances in the field of protein chemistry have significantly enhanced our understanding of the possible intermediates that may occur during protein folding and unfolding. In particular, studies on **alpha-lactalbumin** have led to the theory that the molten globule state may be a possible intermediate in the folding of many proteins. The molten globule state is characterized by a somewhat compact structure, a higher degree of hydration and side chain flexibility, a significant amount of native secondary structure but little tertiary folds, and the ability to react with chaperones. Purified **alpha**- and **kappa**-caseins share many of these same properties; these caseins may thus occur naturally in a **molten globule-like state** with defined, persistent structures. The caseins appear to have defined secondary structures and to proceed to quaternary structures without tertiary folds. This process may be explained, in part, by comparison with the architectural concepts of tensegrity. By taking advantage of this "new view" of protein folding, and applying these concepts to dairy proteins, it may be possible to generate new and useful forms of proteins for the food ingredient market.

ACCESSION NUMBER: 2002:435545 BIOSIS  
DOCUMENT NUMBER: PREV200200435545  
TITLE: Molten globule structures in milk proteins: Implications for potential new structure-function relationships.  
AUTHOR(S): Farrell, H. M., Jr. (1); Qi, P. X.; Brown, E. M.; Cooke, P. H.; Tunick, M. H.; Wickham, E. D.; Unruh, J. J.  
CORPORATE SOURCE: (1) Eastern Regional Research Center, U.S. Department of Agriculture, Agricultural Research Service, 600 E. Mermaid Lane, Wyndmoor, PA, 19038: hfarrell@arserrc.gov USA  
SOURCE: Journal of Dairy Science, (March, 2002) Vol. 85, No. 3, pp. 459-471. <http://www.ADSA.org/jds>. print.  
ISSN: 0022-0302.  
DOCUMENT TYPE: Article  
LANGUAGE: English

L13 ANSWER 4 OF 4 FSTA COPYRIGHT 2003 IFIS

TI Molten globule structures in milk proteins: implications for potential new structure-function relationships.

AN 2002:P1244 FSTA

AB Studies on **alpha-lactalbumin** have led to the theory that the molten globule state may be a possible intermediate in the folding of many proteins. This study examined molten globule structure in **casein** using a range of analytical techniques, including circular dichroism measurements, FTIR spectroscopy and EM. Purified **alpha**- and **kappa**-caseins were observed to occur naturally in a **molten globule-like state** with defined, persistent structures. The caseins appeared to have defined secondary structures and to proceed to quaternary structures without tertiary folds. This process was partially explained by comparison with the architectural concepts of tensegrity. It is suggested that taking advantage of this novel concept of protein folding, and applying these concepts to dairy proteins, may open up possibilities for generating new and useful forms of proteins for the food ingredient market.

TITLE: Molten globule structures in milk proteins: implications for potential new structure-function relationships.

AUTHOR: Farrell, H. M., Jr; Qi, P. X.; Brown, E. M.; Cooke, P. H.; Tunick, M. H.; Wickham, E. D.; Unruh, J. J.

CORPORATE SOURCE: E. Reg. Res. Cent., ARS, USDA, 600 E. Mermaid Lane, Wyndmoor, PA 19038, USA. E-mail hfarrell(a)arserrc.gov

SOURCE: Journal of Dairy Science, (2002) 85 (3) 459-471, 31 ref.  
ISSN: 0022-0302

DOCUMENT TYPE: Journal  
LANGUAGE: English

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FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, SCISEARCH, WPIDS, BIOSIS, FSTA,  
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L4	84 S L3 AND LOW PH
L5	53889 S ION EXCHANGE CHROMATOGRAPHY
L6	31759 S MAL
L7	56 S L6 AND L2
L8	44 S L2 AND MOLTEN GLOBULE-LIKE STATE
L9	172 S L2 AND A STATE
L10	6 S L4 AND L5
L11	37 S L8 NOT L9
L12	37 S L11 AND L2
L13	4 S L12 AND L1